

ABSTRACT OF THE DISCLOSURE

5 The human receptor H4-1BB has been isolated, sequenced
and disclosed herein. The cDNA of the human receptor H4-
1BB is about 65% homologous to the mouse cDNA 4-1BB and was
isolated by using probes derived from cDNA 4-1BB. A fusion
protein for detecting cell membrane ligands to human
10 receptor protein H4-1BB was developed. It comprises the
extracellular portion of the receptor protein H4-1BB and a
detection protein (alkaline phosphatase) bound to the
portion of the receptor protein H4-1BB. B-cells that have
expressed a ligand to receptor protein H4-1BB can be
15 treated with cells that have expressed receptor protein H4-
1BB and B-cell proliferation may be induced. The use of
H4-1BB to block H4-1BB ligand binding has practical
application in the suppression of the immune system during
organ transplantation. A monoclonal antibody against H4-
20 1BB can be used to enhance T-cell proliferation by treating
T-cells that have expressed receptor protein H4-1BB with
the anti H4-1BB monoclonal antibody. Tumors transfected
with H4-1BBL may be capable of delivering antigen-specific
signals as well as the co-stimulatory signals and can be
25 killed by human cytotoxic T lymphocytes.